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<u>L3</u>	L2 AND component	212	<u>L3</u>
<u>L2</u>	L1 AND ((object-oriented) or (object ADJ oriented))	345	<u>L2</u>

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☐ 1. Document ID: US 6535795 B1

L5: Entry 1 of 68

File: USPT

Mar 18, 2003

US-PAT-NO: 6535795

DOCUMENT-IDENTIFIER: US 6535795 B1

TITLE: Method for chemical addition utilizing adaptive optimization

DATE-ISSUED: March 18, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Schroeder; Myron E.	Tomball	TX		
Blaschke; Marilyn W.	Richmond	TX		
Zetlmeisl; Michael J.	Stafford	TX		
Fischer; David M.	Richmond	TX		
Tacchi; Kenneth J.	Houston	TX		

US-CL-CURRENT: 700/266; 210/143, 210/704, 210/705, 210/709, 210/723, 210/726, 210/727, 210/728, 210/739, 210/749, 210/85, 210/96.1, 700/265, 706/15, 706/23

ABSTRACT:

The present invention provides a method for chemical addition utilizing adaptive process control optimizations having a combination of expert system(s), neural network(s) and genetic algorithm(s).

20 Claims, 27 Drawing figures

Exemplary Claim Number: 1

Number of Drawing Sheets: 27

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	PMC	Draw Desc	Image
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☐ 2. Document ID: US 6512966 B2

L5: Entry 2 of 68

File: USPT

Jan 28, 2003

US-PAT-NO: 6512966

DOCUMENT-IDENTIFIER: US 6512966 B2

TITLE: System, method and computer program product for enhancing commercial value of electrical power produced from a renewable energy power production facility

DATE-ISSUED: January 28, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Lof; Per-Anders Kristian	Vallingby			SE
Gertmar; Lars Gustaf Ingolf	Vasteras			SE
Andren; Lars Anders Tommy	Orsundsbro			SE

US-CL-CURRENT: 700/291; 290/44, 290/55, 700/286, 705/412

ABSTRACT:

A method, system and computer program product enhance the commercial value of electrical power produced from a wind turbine production facility. Features include the use of a premier power conversion device that provides an alternative source of power for supplementing an output power of the wind turbine generation facility when lull periods for wind speed appear. The invention includes a communications infrastructure and coordination mechanism for establishing a relationship with another power production facility such that when excess electrical power is produced by the wind turbine facility, the excess may be provided to the power grid while the other energy production facility cuts back on its output production by a corresponding amount. A tracking mechanism keeps track of the amount of potential energy that was not expended at the other facility and places this amount in a virtual energy storage account, for the benefit of the wind turbine facility. When, the wind turbine power production facility experiences a shortfall in its power production output it may make a request to the other source of electric power, and request that an increase its power output on behalf of the wind turbine facility. This substitution of one power production facility for another is referred to herein as a virtual energy storage mechanism. Furthermore, another feature of the present invention is the use of a renewal power exchange mechanism that creates a market for trading renewable units of power, which have been converted into "premier power" and/or "guaranteed" by secondary sources of power source to provide a reliable source of power to the power grid as required by contract.

46 Claims, 39 Drawing figures
Exemplary Claim Number: 1
Number of Drawing Sheets: 34

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	RMK	Draw Desc	Image

☐ 3. Document ID: US 6510353 B1

L5: Entry 3 of 68

File: USPT

Jan 21, 2003

US-PAT-NO: 6510353

DOCUMENT-IDENTIFIER: US 6510353 B1

TITLE: Determining tuning parameters for a process controller from a robustness map

DATE-ISSUED: January 21, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Gudaz; John A.	Bel Air	MD		
Zhang; Yan	Austin	TX		
Wojsznis; Wilhelm K.	Round Rock	TX		

US-CL-CURRENT: 700/37; 700/52, 700/54, 700/71

ABSTRACT:

A simulation procedure simulates the response of a process control loop having a controller tuned according to a set of tuning parameters to illustrate, for example, the overshoot, oscillation, response time, etc. of the controller as tuned. As part of the simulation procedure, a robustness map, such as a plot illustrating phase

margin versus gain margin or other robustness qualities, is created and the robustness of the simulated control loop may be plotted as a point on the robustness map. During the creation of the robustness map, different sets of tuning parameters for a region in which the process control loop is stable are determined and stored and the corresponding robustness qualities of the loop having a controller tuned according to these tuning parameters are also determined and stored. The robustness map is then displayed to a user showing the stable region. Thereafter, a user may select any point within the stable region on the robustness map and, upon doing so, a set of tuning parameters that will produce a control loop with the selected robustness characteristics will then be determined from the previously calculated sets of tuning parameters and robustness qualities. The simulation routine may then simulate the control loop using these new tuning parameters to enable a user to view the performance characteristics of the resulting control loop.

38 Claims, 9 Drawing figures
Exemplary Claim Number: 1
Number of Drawing Sheets: 9

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	FIGS	Draw Desc	Image
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☐ 4. Document ID: US 6505097 B1

L5: Entry 4 of 68

File: USPT

Jan 7, 2003

US-PAT-NO: 6505097
DOCUMENT-IDENTIFIER: US 6505097 B1

TITLE: Arithmetic processing device, inter-object communication method, and robot

DATE-ISSUED: January 7, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Fujita; Masahiro	Saitama			JP
Sakamoto; Takayuki	Kanagawa			JP
Sabe; Kotaro	Tokyo			JP
Takagi; Tsuyoshi	Kanagawa			JP

US-CL-CURRENT: 700/245; 318/568.12, 700/248, 700/249, 700/250, 700/258, 700/260, 700/261, 700/262, 707/4, 74/490.03

ABSTRACT:

An arithmetic processing device for inter-object data communication has an object manager for connecting objects so as to enable exchange of data between the objects, and a connection data supplying unit for supplying the object manager with connection data necessary for achieving the connection between the objects. An inter-object communication method and a robot incorporating the arithmetic processing device are also provided. The robot may be designed to enable a user to replace parts thereof, thus changing the robot configuration. The robot preferably includes a part detection unit for detecting parts attached to the robot, and outputting a part detection result in accordance with the detection. An information storage unit stores information corresponding to the part detection result for each configuration obtained by replacement of the parts. A software changing unit revises robot-controlling software in correspondence with a changed configuration, based on a comparison of the part detection result with the information stored in the information storage unit. A controller controls general robot operations in accordance with the revised software.

28 Claims, 24 Drawing figures
Exemplary Claim Number: 1
Number of Drawing Sheets: 21

☐ 5. Document ID: US 6501995 B1

L5: Entry 5 of 68

File: USPT

Dec 31, 2002

US-PAT-NO: 6501995

DOCUMENT-IDENTIFIER: US 6501995 B1

TITLE: Process control system and method with improved distribution, installation and validation of components

DATE-ISSUED: December 31, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Kinney; Thomas B.	Franklin	MA		
Christiansen; T. Eric	Fall River	MA		
Hansen; Peter D.	Wellesley	MA		
Ling; Bo	Sharon	MA		
Badavas; Paul C.	Southboro	MA		
Thibault; Richard L.	Plainville	MA		

US-CL-CURRENT: 700/1; 717/168

ABSTRACT:

A control system has blocks or other components that facilitate validation of their own replacements, e.g., downloaded via e-commerce transactions. The system includes first and second process control components. The first component is coupled to a third process control component, with which it transfers information, e.g., as part of an active or ongoing control process. The second component can be, for example, an update or other potential replacement for the first component. The first and/or second components can effect substitution of the second component for the first. More particularly, they can effect coupling of the second component for information transfer with the third component and decoupling of the first component from such transfer with the third component. Preferably, such coupling and decoupling occur while the process control system remains active.

9 Claims, 5 Drawing figures

Exemplary Claim Number: 1

Number of Drawing Sheets: 3

☐ 6. Document ID: US 6498955 B1

L5: Entry 6 of 68

File: USPT

Dec 24, 2002

US-PAT-NO: 6498955

DOCUMENT-IDENTIFIER: US 6498955 B1

TITLE: Member preference control of an environment

DATE-ISSUED: December 24, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
McCarthy; Joseph Francis	Libertyville	IL		
Anagnost; Theodore Dean	Darien	IL		

US-CL-CURRENT: 700/1; 700/275

ABSTRACT:

A system is disclosed that enables intelligent environments comprised of physical spaces that sense and respond to the people and events taking place in them to dynamically influence environmental factors that affect them, such as the lighting, temperature, decor or background music. An intelligent environment in accordance with one embodiment of the present invention controls the selection of music played in a fitness center. Two different algorithms are utilized to arbitrate preferences in a shared environment: one seeks to maximize the average satisfaction of the inhabitants, the other seeks to maximize the equitable distribution of satisfaction among the inhabitants. The resultant system is an approach that affords effective environmental control.

28 Claims, 12 Drawing figures
Exemplary Claim Number: 1
Number of Drawing Sheets: 12

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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☐ 7. Document ID: US 6496744 B1

L5: Entry 7 of 68

File: USPT

Dec 17, 2002

US-PAT-NO: 6496744
DOCUMENT-IDENTIFIER: US 6496744 B1

TITLE: Method and system for custom manufacture and delivery of a data product

DATE-ISSUED: December 17, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Cook; David Philip	Dallas	TX	75230	

US-CL-CURRENT: 700/95; 700/48, 705/26

ABSTRACT:

A system for selling, manufacturing and distributing a custom digital data product from retail stores, over the Internet, over the telephone, or by electronic means (e.g., fax, e-mail, and the like) wherein a customer is provided (e.g., by electronic mail verification) order tracking information. After a customer selects a "set" of sound recordings or data from a library or catalog of such recordings or data and payment or credit is received or verified, an image of the "set" is assembled from a storage or "disk" farm. The image is preferably assembled at a manufacturing facility, e.g., a CD-ROM burner farm, where the product is then made. Every data object on the product may have a code associated therewith for later reference. The disk and burner farms communicate via a high speed communications subsystem to facilitate continuous processing. Upon assembly and manufacture, the product is packaged and shipped. Throughout the manufacture and distribution, the customer may track the process by activating a hyperlink in one or more e-mail confirmation messages provided by the service provider, or by entering order/tracking numbers from retail terminals or by telephone, or the like.

32 Claims, 2 Drawing figures
Exemplary Claim Number: 1
Number of Drawing Sheets: 2

☐ 8. Document ID: US 6489168 B1

L5: Entry 8 of 68

File: USPT

Dec 3, 2002

US-PAT-NO: 6489168

DOCUMENT-IDENTIFIER: US 6489168 B1

TITLE: Analysis and control of parallel chemical reactions

DATE-ISSUED: December 3, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Wang; Pei	San Jose	CA		
Dales; G. Cameron	Palo Alto	CA		

US-CL-CURRENT: 436/37; 422/130, 422/131, 422/196, 422/197, 422/62, 422/93, 436/147, 436/159, 436/43, 436/85, 700/266, 700/268, 700/269

ABSTRACT:

Computer programs and computer-implemented methods for monitoring the progress and properties of parallel chemical reactions. The invention repeatedly receives a measured value or values associated with the contents of each of a plurality of reactor vessels and displays the measured over the course of a combinatorial chemical reaction. Reaction parameters associated with individual reactor vessels are changed in response to the value measured during the reaction. Reaction parameters include temperature, pressure, stirring speed. The reaction occurring in one or more reactor vessels is quenched in response to values measured during the reaction. The measured values are used to calculate experimental results including temperature change, pressure change, percent conversion of starting material, and viscosity. The measured values and experimental results are displayed. In another aspect, the invention features a method for controlling a combinatorial chemical reactor. The method includes receiving set points for properties associated with the reaction environment in multiple reactor vessels, measuring experimental values associated with each reactor vessel, displaying the experimental values, and changing the vessels' reaction environment in response to input set points and changing experimental values. In another aspect, the invention features a reactor control system for monitoring and controlling a parallel chemical reaction. The system includes modules for providing control signals to a parallel chemical reactor, receiving measured values from the parallel chemical reactor and calculating experimental results from the measured values, and for receiving reaction parameters from the user and displaying the set of measured values and the calculated values.

38 Claims, 15 Drawing figures

Exemplary Claim Number: 1

Number of Drawing Sheets: 10

☐ 9. Document ID: US 6463352 B1

L5: Entry 9 of 68

File: USPT

Oct 8, 2002

US-PAT-NO: 6463352

DOCUMENT-IDENTIFIER: US 6463352 B1

TITLE: System for management of cutting machines

DATE-ISSUED: October 8, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Tadokoro; Masahiko	La Mirada	CA		
Treerojporn; Apichat	Newport Beach	CA		

US-CL-CURRENT: 700/169; 700/159, 700/180, 700/96, 702/33, 709/223

ABSTRACT:

Controlling software components for cutting machines are distributed in nature, and can be placed on any convenient processor on a network. Each is provided with its own network address, or specific ports are assigned thereto at a shared (e.g., IP or network) address, and the functionality of each component is executed without reference to its physical location on the network. Virtual machine components handle the collection of data from cutting machines, while a machine monitor component collects data from the virtual machine components. User interface interpreting and serving components are also distributed and portable, and a controlling user interface may therefore be accessed, viewed, and take user input wherever such tasks are most convenient. The changeable user interface permits machines, jobs, materials, and cutting elements to be managed centrally, or from distributed locations in the facility or on the Internet at large. Cutting elements may be tracked for lifetime and for replacement reasons and other commentary data. The components at each cutting machine, in cooperation with the database accessible therefrom, track the usage (e.g., in hours or area cut) of any particular cutting element, and records are automatically maintained.

34 Claims, 51 Drawing figures

Exemplary Claim Number: 1

Number of Drawing Sheets: 51

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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☐ 10. Document ID: US 6434435 B1

L5: Entry 10 of 68

File: USPT

Aug 13, 2002

US-PAT-NO: 6434435

DOCUMENT-IDENTIFIER: US 6434435 B1

TITLE: Application of adaptive object-oriented optimization software to an automatic optimization oilfield hydrocarbon production management system

DATE-ISSUED: August 13, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Tubel; Paulo S.	The Woodlands	TX		
Hales; Lynn B.	Salt Lake City	UT		
Ynchausti; Randy A.	Centerville	UT		
Foot, Jr.; Donald G.	Fruit Heights	UT		

US-CL-CURRENT: 700/30; 166/250.15, 166/53, 340/853.1, 340/853.3, 340/853.8, 340/856.3, 700/28, 700/29, 700/31, 700/32, 700/46, 700/49

ABSTRACT:

The systems and the methods relating to process control optimizations systems useful

to manage oilfield hydrocarbon production. The systems and the methods utilize intelligent software objects which exhibit automatic adaptive optimization behavior. The systems and the methods can be used to automatically manage hydrocarbon production in accordance with one or more production management goals using one or more adaptable software models of the production processes.

11 Claims, 30 Drawing figures
Exemplary Claim Number: 1
Number of Drawing Sheets: 30

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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☐ 11. Document ID: US 6415196 B1

L5: Entry 11 of 68

File: USPT

Jul 2, 2002

US-PAT-NO: 6415196
DOCUMENT-IDENTIFIER: US 6415196 B1

TITLE: Manufacturing scheduling process with improved modeling, scheduling and editing capabilities for solving finite capacity planning problems

DATE-ISSUED: July 2, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Crampton; Myrick D.	Greenwood Village	CO		
Roadifer; James L.	Highlands Ranch	CO		
Smith; Kevin J.	Highlands Ranch	CO		
Willoughby; John K.	Littleton	CO		

US-CL-CURRENT: 700/100; 700/106, 709/104

ABSTRACT:

A method for solving finite capacity problems such as how to satisfy a customer's request for a manufactured product, by describing the environment in which the problem exists in the form of a demand (e.g., customer order), including the available resources for satisfying the demand, defining the demand, selecting a plan for achieving the various objectives of the demand in an optimal order, and evaluating whether the plan will work. Also disclosed is a computer program product implementing the invention, and a system for coordinating multiple sources of input into a system implementing the disclosed invention.

19 Claims, 55 Drawing figures
Exemplary Claim Number: 1
Number of Drawing Sheets: 33

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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KWIC	Draw Desc	Image
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☐ 12. Document ID: US 6411862 B1

L5: Entry 12 of 68

File: USPT

Jun 25, 2002

US-PAT-NO: 6411862
DOCUMENT-IDENTIFIER: US 6411862 B1

TITLE: Apparatus and method for managing and distributing design and manufacturing information throughout a sheet metal production facility

DATE-ISSUED: June 25, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Hazama; Kensuke	Yorba Linda	CA		
Kask; Kalev	Irvine	CA		
Sakai; Satoshi	Newport Coast	CA		
Subbaraman; Anand	Santa Ana	CA		

US-CL-CURRENT: 700/182; 700/165

ABSTRACT:

An apparatus and method is provided for managing and distributing design and manufacturing information throughout a factory in order to facilitate the production of components, such as bent sheet metal components. In accordance with an aspect of the present invention, the management and distribution of critical design and manufacturing information is achieved by storing and distributing the design and manufacturing information associated with each job. By replacing the traditional paper job set-up or work sheet with, for example, an electronically stored job sheet that can be accessed instantaneously from any location in the factory, the present invention improves the overall efficiency of the factory. In addition, through the various aspects and features of the invention, the organization and accessibility of part information and stored expert knowledge is improved.

35 Claims, 96 Drawing figures
Exemplary Claim Number: 1
Number of Drawing Sheets: 68

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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EMD	Draw Desc	Image
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☐ 13. Document ID: US 6400996 B1

L5: Entry 13 of 68

File: USPT

Jun 4, 2002

US-PAT-NO: 6400996

DOCUMENT-IDENTIFIER: US 6400996 B1

TITLE: Adaptive pattern recognition based control system and method

DATE-ISSUED: June 4, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Hoffberg; Steven M.	West Harrison	NY	10994	
Hoffberg-Borghesani; Linda I.	Acton	MA	01720	

US-CL-CURRENT: 700/83; 345/810, 345/840, 345/841, 370/218, 370/355, 700/17, 700/24, 700/25, 700/86, 700/87, 709/102, 709/223, 709/227, 709/318

ABSTRACT:

An adaptive interface for a programmable system, for predicting a desired user function, based on user history, as well as machine internal status and context. The apparatus receives an input from the user and other data. A predicted input is presented for confirmation by the user, and the predictive mechanism is updated based on this feedback. Also provided is a pattern recognition system for a multimedia device, wherein a user input is matched to a video stream on a conceptual basis, allowing inexact programming of a multimedia device. The system analyzes a data stream for correspondence with a data pattern for processing and storage. The data stream is subjected to adaptive pattern recognition to extract features of

interest to provide a highly compressed representation that may be efficiently processed to determine correspondence. Applications of the interface and system include a video cassette recorder (VCR), medical device, vehicle control system, audio device, environmental control system, securities trading terminal, and smart house. The system optionally includes an actuator for effecting the environment of operation, allowing closed-loop feedback operation and automated learning.

25 Claims, 32 Drawing figures
Exemplary Claim Number: 1
Number of Drawing Sheets: 28

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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KWIC	Draw Desc	Image
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☐ 14. Document ID: US 6385496 B1

L5: Entry 14 of 68

File: USPT

May 7, 2002

US-PAT-NO: 6385496
DOCUMENT-IDENTIFIER: US 6385496 B1

TITLE: Indirect referencing in process control routines

DATE-ISSUED: May 7, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Irwin; William G.	Austin	TX		
Havekost; Robert B.	Austin	TX		
Stevenson; Dennis L.	Round Rock	TX		
Deitz; David L.	Austin	TX		

US-CL-CURRENT: 700/87; 700/266, 707/104.1, 709/331

ABSTRACT:

A generic process control routine for a process control system is written to include alias names and dynamic reference parameters. Before execution of a process control function on a particular unit of the process control system, an instance of the generic routine is created, in which the alias names are replaced by parameters defined in an alias resolution table for the particular unit. The controller then executes the instantiated version of the generic routine to control operation of the unit. The generic routine can have multiple algorithms associated therewith, wherein each of the algorithms is designed to control different units having somewhat different hardware, even though these different units perform essentially the same function within the process control system. The generic routine may also be used with multiple classes of hardware that perform different functions within the process control system. The dynamic reference parameters of the generic process control routine enable a field to be specified at or during run-time and include a reference attribute that stores a path or tag to the referenced field, a connection attribute that identifies whether an actual connection to the field specified by the reference attribute can be made, attributes that enable reading of and/or writing to the field specified by the reference attribute as a string or as a numerical value and attributes that enable status information of the referenced field to be accessed.

28 Claims, 3 Drawing figures
Exemplary Claim Number: 1
Number of Drawing Sheets: 3

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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KWIC	Draw Desc	Image
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☐ 15. Document ID: US 6366300 B1

L5: Entry 15 of 68

File: USPT

Apr 2, 2002

US-PAT-NO: 6366300

DOCUMENT-IDENTIFIER: US 6366300 B1

TITLE: Visual programming method and its system

DATE-ISSUED: April 2, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Ohara; Eiji	Tokyo			JP
Suzuki; Midori	Tokyo			JP
Kondo; Shozo	Tokyo			JP
Suetsugu; Nobuhiro	Tokyo			JP
Hagino; Akio	Tokyo			JP

US-CL-CURRENT: 345/771; 345/835, 345/967, 700/83, 706/47, 706/59, 717/113

ABSTRACT:

The user is allowed to automatically generate a program by using a visual programming method and a system adopting the method for automatically generating a program wherein an object selection means 8 is used for selecting a behavioral graphical object defining the behavior of a load connected thereto, a behavior selection means 9 is used for selecting the type of the behavior of the behavioral graphical object, a relevant object selection means 10 is used for selecting relevant graphical objects related to the behavior of the behavioral graphical object and a behavioral rule setting means 11 is used for setting behavioral rules of the behavioral graphical object whereas a behavioral characteristic selection unit 3509 is used for selecting a behavior of a behavioral graphical object selected by using a behavioral object selection unit 3508, behavioral condition setting unit 3510 is used for setting conditions for the behavior of the behavioral graphical object and a relevant object selection unit 3511 is used for defining a relation.

17 Claims, 69 Drawing figures

Exemplary Claim Number: 9

Number of Drawing Sheets: 46

Full Title Citation Front Review Classification Date Reference Sequences Attachments

RMK Draw Desc Image

☐ 16. Document ID: US 6341261 B1

L5: Entry 16 of 68

File: USPT

Jan 22, 2002

US-PAT-NO: 6341261

DOCUMENT-IDENTIFIER: US 6341261 B1

TITLE: Knowledge driven composite design optimization process and system therefor

DATE-ISSUED: January 22, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Vasey-Glandon; Virginia M.	Florissant	MO		
Hale; Richard D.	St. Louis	MO		
Schmitz; Jeffrey J.	St. Charles	MO		

ABSTRACT:

A knowledge driven composite design optimization process for designing a laminate part includes steps for generating a globally optimized 3-D ply definition for a laminate part, and modifying the 3-D ply definition to include features of the laminate part, where the generating and modifying steps are parametrically linked to one another and are performed in the recited order. Preferably, the generating step includes substeps for determining connectivity between a plurality of regions defining the laminate part, subsequently generating ramp features detailing interconnection of the regions defining the laminate part, and displaying views and corresponding tabular data describing the laminate part and illustrating both inter-region connectivity and the ramp features as specified by a user. A knowledge driven composite design optimization system and associated computer memory for operating a general purpose computer as a knowledge driven composite design optimization system are also described.

12 Claims, 68 Drawing figures

Exemplary Claim Number: 1

Number of Drawing Sheets: 68

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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NIMC	Draw Desc	Image
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☐ 17. Document ID: US 6327514 B1

L5: Entry 17 of 68

File: USPT

Dec 4, 2001

US-PAT-NO: 6327514

DOCUMENT-IDENTIFIER: US 6327514 B1

TITLE: Apparatus and method for managing and distributing design and manufacturing information throughout a sheet metal production facility

DATE-ISSUED: December 4, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Hazama; Kensuke	Yorba Linda	CA		
Kask; Kalev	Irvine	CA		
Sakai; Satoshi	Newport Coast	CA		
Schwalb; Moshe	Irvine	CA		

US-CL-CURRENT: 700/145; 700/165, 700/182

ABSTRACT:

A computer program is provided for developing a bend model of a part to be produced at an intelligent production facility. In accordance with an aspect of the disclosed program, faces of the part are detected based on initial part information, and bendlines of the part are identified based on the detected faces of the part. Further, additional part information is generated by performing a predetermined operation (e.g., a folding operation or an unfolding operation) on the detected faces of the part. The disclosed program also includes other capabilities, such as the capability to perform clean-up operations on initial, 2-D part information and to selectively eliminate part thickness representations in order to facilitate the preparation of a 3-D representation of the part from the modified 2-D part information.

57 Claims, 96 Drawing figures

Exemplary Claim Number: 1

Number of Drawing Sheets: 68

☐ 18. Document ID: US 6301527 B1

L5: Entry 18 of 68

File: USPT

Oct 9, 2001

US-PAT-NO: 6301527

DOCUMENT-IDENTIFIER: US 6301527 B1

TITLE: Utilities communications architecture compliant power management control system

DATE-ISSUED: October 9, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Butland; Geoff	Farmington	CT		
Meagher; Patrick	Cromwell	CT		
Narel; Radoslaw	New Britain	CT		
Petrizzi; James	Tariffville	CT		
Baigent; Drew	Toronto			CA

US-CL-CURRENT: 700/286; 700/295, 713/300

ABSTRACT:

Software (50) is loaded into the host computer (12) and includes an Ethernet server (52), a Modbus (DDE) server (54), an MMS server (56), and a third-party proprietary protocol server (58). Each of these servers (52, 54, 56, and 58) allows external programs (60) running on the host and view node computers (12, 40, and 44) to access power management data from the various devices (26) in the power management control system (10). Modbus server (52) allows external programs (60) to access power management data from devices (26), which communicate using the Modbus protocol. MMS server (56) allows external programs (60) to access power management data from MMS/UCA2 compliant devices (34), which communicate using the MMS protocol. Ethernet server (52) provides for network layer TCP/IP encapsulation for communications over Ethernet networks (20) and (22). Third party server (58) allows communications between external programs (60) and device (38), which uses any proprietary protocol. Power management control system (10) implements the UCA Version 2 architecture, having an Ethernet physical layer, a Transport Control Protocol/Internet Protocol (TCP/IP) network layer, and a Manufacturing Message Specification (MMS) application layer.

11 Claims, 11 Drawing figures

Exemplary Claim Number: 1

Number of Drawing Sheets: 9

☐ 19. Document ID: US 6292715 B1

L5: Entry 19 of 68

File: USPT

Sep 18, 2001

US-PAT-NO: 6292715

DOCUMENT-IDENTIFIER: US 6292715 B1

TITLE: Robotic process planning method and apparatus using templates

DATE-ISSUED: September 18, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Rongo; Robert	Danville	IN		

US-CL-CURRENT: 700/249; 318/568_1, 318/568_11, 318/568_13, 318/568_14, 700/145, 700/165, 700/173, 700/192, 700/245, 700/257, 700/258, 700/259, 700/260, 700/900, 701/200

ABSTRACT:

A method of generating a robotic process plan for performing a process on a work structure includes a step of receiving input identifying a template corresponding to a plurality of geometric features of the work structure, each geometric feature associated with one or more robotic process elements. The method further includes a step of receiving input associating work structure data with the identified template. The method also includes a step of generating the robotic process plan based on the associated work structure data and the robotic process elements associated with the template.

21 Claims, 19 Drawing figures
Exemplary Claim Number: 1
Number of Drawing Sheets: 19

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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RWMC	Draw Desc	Image
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☐ 20. Document ID: US 6289320 B1

L5: Entry 20 of 68

File: USPT

Sep 11, 2001

US-PAT-NO: 6289320

DOCUMENT-IDENTIFIER: US 6289320 B1

TITLE: Automated banking machine apparatus and system

DATE-ISSUED: September 11, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Drummond; Jay Paul	Massillon	OH		
Blackson; Dale	Canton	OH		
Cichon; Bob A.	Canton	OH		
Ess; Joseph C.	North Canton	OH		
Moales; Mark A.	North Canton	OH		
Weis; David W.	Ashland	OH		
Smith; Mark D.	North Canton	OH		
Church; James	Kent	OH		

US-CL-CURRENT: 705/35; 221/1, 700/241, 705/43, 902/14

ABSTRACT:

An automated banking machine (12) is operative to conduct transactions in response to HTML documents and TCP/IP messages exchanged with a local computer system (14) through an intranet (16), as well as in response to messages exchanged with foreign servers (20, 22, 24, 26, 28, 96) in a wide area network (18). The banking machine includes a computer (34) having an HTML document handling portion (76, 80, 82). The HTML document handling portion is operative to communicate through a proxy server (88), with a home HTTP server (90) in the intranet or the foreign servers in the wide area network. The computer further includes a device application portion (84) which interfaces with the HTML document handling portion and dispatches messages to

operate devices (36) in the automated banking machine. The devices include a sheet dispenser mechanism (42) which dispenses currency as well as other transaction devices. The device application portion communicates with a device interfacing software portion (64) in the banking machine through a device server (92) in the intranet. The device server maintains local control over the devices in the banking machine including the sheet dispenser. The banking machine operates to read indicia on the user's card corresponding to a system address. The computer is operative to connect the banking machine to the home or foreign server corresponding to the system address, which connected server operates the banking machine until the completion of transactions by the user.

14 Claims, 31 Drawing figures
Exemplary Claim Number: 1
Number of Drawing Sheets: 31

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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RMK	Draw Desc	Image
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☐ 21. Document ID: US 6219719 B1

L5: Entry 21 of 68

File: USPT

Apr 17, 2001

US-PAT-NO: 6219719
DOCUMENT-IDENTIFIER: US 6219719 B1

TITLE: Method and system for managing a group of computers

DATE-ISSUED: April 17, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Graf; Lars Oliver	Rensselaer	NY		

US-CL-CURRENT: 710/1; 700/291, 700/292, 706/45, 714/1, 714/20, 714/5, 714/712

ABSTRACT:

The system and method of this invention automatically manages a group of computers by automatically gathering data, storing the data, analyzing the stored data to identify specified conditions, and initiating automated actions to respond to the detected conditions. The invention, hereafter "SYSTEMWatch AI-L", comprises a SYSTEMWatch AI-L client which turns a computer into a managed computer, a SYSTEMWatch AI-L console, which turns a computer into a monitoring computer, a SYSTEMWatch AI-L send facility, which allows a system administrator to send commands to various SYSTEMWatch AI-L clients through the SYSTEMWatch AI-L console, and a SYSTEMWatch AI-L report facility which allows a system administrator to query information collected and processed by the SYSTEMWatch AI-L clients and SYSTEMWatch AI-L consoles.

11 Claims, 13 Drawing figures
Exemplary Claim Number: 1
Number of Drawing Sheets: 12

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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RMK	Draw Desc	Image
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☐ 22. Document ID: US 6219586 B1

L5: Entry 22 of 68

File: USPT

Apr 17, 2001

US-PAT-NO: 6219586
DOCUMENT-IDENTIFIER: US 6219586 B1

TITLE: Apparatus and method for managing and distributing design and manufacturing information throughout a sheet metal production facility

DATE-ISSUED: April 17, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Sakai; Satoshi	Newport Coast	CA		

US-CL-CURRENT: 700/182; 700/165, 700/169, 700/179, 700/180, 700/206, 700/83, 700/97

ABSTRACT:

An apparatus and method is provided for managing and distributing design and manufacturing information throughout a factory in order to facilitate the production of components, such as bent sheet metal components. In accordance with an aspect of the present invention, the management and distribution of critical design and manufacturing information is achieved by storing and distributing the design and manufacturing information associated with each job. By replacing the traditional paper job set-up or work sheet with, for example, an electronically stored job sheet that can be accessed instantaneously from any location in the factory, the present invention improves the overall efficiency of the factory. In addition, through the various aspects and features of the invention, the organization and accessibility of part information and stored expert knowledge is improved.

12 Claims, 96 Drawing figures
Exemplary Claim Number: 1
Number of Drawing Sheets: 68

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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MMC	Draw Desc	Image
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☐ 23. Document ID: US 6212441 B1

L5: Entry 23 of 68

File: USPT

Apr 3, 2001

US-PAT-NO: 6212441

DOCUMENT-IDENTIFIER: US 6212441 B1

TITLE: Apparatus and method for managing and distributing design and manufacturing information throughout a sheet metal production facility

DATE-ISSUED: April 3, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Hazama; Kensuke	Yorba Linda	CA		
Kask; Kalev	Irvine	CA		
Sakai; Satoshi	Newport Coast	CA		
Subbaraman; Anand Heriharan	Santa Ana	CA		

US-CL-CURRENT: 700/98; 345/420, 345/660, 345/964, 700/118, 700/163, 700/17, 700/182, 700/83, 707/103R

ABSTRACT:

An apparatus and method is provided for managing and distributing design and manufacturing information throughout a factory in order to facilitate the production of components, such as bent sheet metal components. In accordance with an aspect of the present invention, the management and distribution of critical design and manufacturing information is achieved by storing and distributing the design and manufacturing information associated with each job. By replacing the traditional

paper job set-up or work sheet with, an electronically stored job sheet that can be accessed instantaneously from any location in the factory, the present invention improves the overall efficiency of the factory. In addition, through the various aspects and features of the invention, the organization and accessibility of part information and stored expert knowledge is improved.

77 Claims, 92 Drawing figures
Exemplary Claim Number: 1
Number of Drawing Sheets: 67

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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RWC	Draw Desc	Image
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☐ 24. Document ID: US 6201996 B1

L5: Entry 24 of 68

File: USPT

Mar 13, 2001

US-PAT-NO: 6201996
DOCUMENT-IDENTIFIER: US 6201996 B1

TITLE: Object-oriented programmable industrial controller with distributed interface architecture

DATE-ISSUED: March 13, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Crater; Kenneth C.	North Grafton	MA		
Pierson; Daniel L.	Hudson	MA		
Schley; William O.	Holliston	MA		

US-CL-CURRENT: 700/9; 700/69, 700/79, 700/96

ABSTRACT:

A controller capable of interacting with a remotely located computer has an object-oriented control structure facilitating remote access to data formatted in accordance with instructions defined by the controller. The control structure may be organized around a database of object items each associated with a control function. For each control function, the items include one or more procedures for performing an action associated with the control function, and one or more procedures for displaying data associated with the control function. The action procedures effectively define the controller's repertoire with respect to a particular control function. The display procedures comprise instructions retrievable and executable by the remotely located computer, causing display thereon of the data in a predetermined format (i.e., the format prescribed by the instructions). The controller facilitates selection and performance of actions in the database, and execution of the display procedure makes the display instructions accessible to the remotely located computer.

33 Claims, 13 Drawing figures
Exemplary Claim Number: 1
Number of Drawing Sheets: 13

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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RWC	Draw Desc	Image
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☐ 25. Document ID: US 6195591 B1

L5: Entry 25 of 68

File: USPT

Feb 27, 2001

US-PAT-NO: 6195591
DOCUMENT-IDENTIFIER: US 6195591 B1

TITLE: Process control system using a process control strategy distributed among multiple control elements

DATE-ISSUED: February 27, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Nixon; Mark	Round Rock	TX		
Havekost; Robert B.	Austin	TX		
Jundt; Larry O.	Round Rock	TX		
Stevenson; Dennis	Round Rock	TX		
Ott; Michael G.	Austin	TX		
Webb; Arthur	Leicestershire			GB
Lucas; Mike	Leicestershire			GB

US-CL-CURRENT: 700/83; 700/19, 700/2, 700/5, 700/87, 700/88, 709/208, 709/221, 713/100, 713/2

ABSTRACT:

A process controller implements an overall, user-developed control strategy in a process control network that includes distributed controller and field devices, such as Fieldbus and non-Fieldbus devices. A user defines the control strategy by building a plurality of function blocks and control modules and downloading or installing user-specified portions of the control strategy into the Fieldbus devices and the non-Fieldbus devices. Thereafter, the Fieldbus devices automatically perform the downloaded portions of the overall strategy independently of other portions of the control strategy. For example in a process control system that includes distributed field devices, controllers and workstations, portions of the control strategy downloaded or installed into the field devices operate independently of and in parallel with the control operations of the controllers and the workstations, while other control operations manage the Fieldbus devices and implement other portions of the control strategy.

21 Claims, 25 Drawing figures
Exemplary Claim Number: 20
Number of Drawing Sheets: 21

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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NUM	Draw Desc	Image
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☐ 26. Document ID: US 6185476 B1

L5: Entry 26 of 68

File: USPT

Feb 6, 2001

US-PAT-NO: 6185476
DOCUMENT-IDENTIFIER: US 6185476 B1

TITLE: Apparatus and method for managing and distributing design and manufacturing information throughout a sheet metal production facility

DATE-ISSUED: February 6, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Sakai; Satoshi	Newport Coast	CA		

US-CL-CURRENT: 700/182; 345/964, 345/965, 345/966, 345/967, 700/145, 700/163, 700/165, 700/179, 700/180, 700/83, 72/379.2, 72/389.1

ABSTRACT:

An apparatus and method is provided for managing and distributing design and manufacturing information throughout a factory in order to facilitate the production of components, such as bent sheet metal components. In accordance with an aspect of the present invention, the management and distribution of critical design and manufacturing information is achieved by storing and distributing the design and manufacturing information associated with each job. By replacing the traditional paper job set-up or work sheet with, for example, an electronically stored job sheet that can be accessed instantaneously from any location in the factory, the present invention improves the overall efficiency of the factory. In addition, through the various aspects and features of the invention, the organization and accessibility of part information and stored expert knowledge is improved.

30 Claims, 96 Drawing figures
Exemplary Claim Number: 1
Number of Drawing Sheets: 68

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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NAME	Draw Desc	Image
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☐ 27. Document ID: US 6154681 A

L5: Entry 27 of 68

File: USPT

Nov 28, 2000

US-PAT-NO: 6154681
DOCUMENT-IDENTIFIER: US 6154681 A

TITLE: Asynchronous distributed-object building automation system with support for synchronous object execution

DATE-ISSUED: November 28, 2000

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Drees; Kirk H.	Cedarburg	WI		
Gloudeman; Jeffrey J.	Franklin	WI		
Gottschalk; Donald A.	Wauwatosa	WI		
Rasmussen; David E.	Dousman	WI		

US-CL-CURRENT: 700/19; 700/100, 700/276

ABSTRACT:

A computer-implemented building automation system is provided with an asynchronous object-oriented operating environment that is able to provide support for synchronous object execution with respect to real time, including those used to maintain closed-loop control over a system. The operating environment for supporting standard objects includes a clock mechanism for maintaining time and a scheduling mechanism for initiating the methods associated with the standard objects. A control method (i.e. PID control method) of a first standard object is scheduled for execution at a predefined schedule time with the schedule mechanism, and at some later time is initiated by the schedule mechanism. Upon execution, the control method determines an actual time of initiation by reading the clock mechanism and adjusts its control method using this actual time when the actual time exceeds the schedule time. More specifically, the actual time is determined by reading an elapsed time from the clock mechanism and computing a difference between this elapsed time and a start time that was determined by reading the clock mechanism at the time the control method was scheduled.

7 Claims, 9 Drawing figures
Exemplary Claim Number: 1
Number of Drawing Sheets: 7

☐ 28. Document ID: US 6119125 A

L5: Entry 28 of 68

File: USPT

Sep 12, 2000

US-PAT-NO: 6119125

DOCUMENT-IDENTIFIER: US 6119125 A

TITLE: Software components for a building automation system based on a standard object superclass

DATE-ISSUED: September 12, 2000

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Gloudeman; Jeffrey J.	Franklin	WI		
Gottschalk; Donald A.	Wauwatosa	WI		
Rasmussen; David E.	Dousman	WI		
Wainscott, Jr.; Barrett G.	Waukesha	WI		

US-CL-CURRENT: 707/103R; 700/266, 707/104.1, 709/321

ABSTRACT:

A computer-implemented building automation system provides a computer software architecture that supports object-oriented system development. An application engineer designs an application to perform a building automation function that solves a problem or customer need in the context of a building automation system. In the object-oriented paradigm, standard objects are the fundamental building block used to construct an application. Based on predetermined physical relationships defined by physical laws associated with building automation functions, the present invention defines a fundamental set of control-based standard objects for constructing an application. An additional set of information-type standard objects have also been defined for use in conjunction with this set of control-based standard objects. Standard objects are interconnected by "pulling" or "pushing" information from one standard object to another standard object using common communication methods. Assembly objects and application objects are two additional types of user-defined standard objects for interconnecting standard objects, thereby constructing a building automation application.

8 Claims, 9 Drawing figures

Exemplary Claim Number: 1

Number of Drawing Sheets: 8

☐ 29. Document ID: US 6112126 A

L5: Entry 29 of 68

File: USPT

Aug 29, 2000

US-PAT-NO: 6112126

DOCUMENT-IDENTIFIER: US 6112126 A

TITLE: Adaptive object-oriented optimization software system

DATE-ISSUED: August 29, 2000

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Hales; Lynn B.	Salt Lake City	UT		
Ynchausti; Randy A.	Centerville	UT		
Foot, Jr.; Donald G.	Fruit Heights	UT		

US-CL-CURRENT: 700/29; 700/28, 700/30, 700/49, 700/83, 700/86

ABSTRACT:

The present invention relates to process control optimization systems which utilize an adaptive optimization software system comprising goal seeking intelligent software objects; the goal seeking intelligent software objects further comprise internal software objects which include expert system objects, adaptive models objects, optimizer objects, predictor objects, sensor objects, and communication translation objects. The goal seeking intelligent software objects can be arranged in a hierarchical relationship whereby the goal seeking behavior of each intelligent software object can be modified by goal seeking intelligent software objects higher in the hierarchical structure. The goal seeking intelligent software objects can also be arranged in a relationship which representationally corresponds to the controlled process' flow of materials or data.

21 Claims, 27 Drawing figures

Exemplary Claim Number: 1

Number of Drawing Sheets: 27

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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RMIC	Draw Desc	Image
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☐ 30. Document ID: US 6094600 A

L5: Entry 30 of 68

File: USPT

Jul 25, 2000

US-PAT-NO: 6094600

DOCUMENT-IDENTIFIER: US 6094600 A

TITLE: System and method for managing a transaction database of records of changes to field device configurations

DATE-ISSUED: July 25, 2000

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Sharpe, Jr.; Richard R.	Lakeville	MN		
Tielens; Craig R.	Minneapolis	MN		
Westbrock; Jon	Richfield	MN		
Olson; Gene H.	Minneapolis	MN		
Bruck; Robert	Apple Valley	MN		

US-CL-CURRENT: 700/19; 700/83, 702/187

ABSTRACT:

A computer-based database management method permits management of a configuration database associated with one of a plurality of devices. Each device has a variable configuration which includes at least one adjustable parameter. The method includes the steps of selecting a particular device, selecting a particular parameter of the particular device, assigning a particular value for the particular parameter at a particular time, communicating the particular value for the particular parameter to the particular device at the particular time, creating a transaction record, and storing the transaction record in a configuration database. The transaction record includes an identifier uniquely identifying the particular device and further

specifies the particular parameter of the particular device, the particular value for the particular parameter, and the particular time at which the particular value is to be applied to the particular parameter.

22 Claims, 24 Drawing figures
Exemplary Claim Number: 1
Number of Drawing Sheets: 24

Full Title Citation Front Review Classification Date Reference Sequences Attachments

KWNC Draw Desc Image

☐ 31. Document ID: US 6065857 A

L5: Entry 31 of 68

File: USPT

May 23, 2000

US-PAT-NO: 6065857
DOCUMENT-IDENTIFIER: US 6065857 A

TITLE: Computer readable medium for managing and distributing design and manufacturing information throughout a sheet metal production facility

DATE-ISSUED: May 23, 2000

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Hazama; Kensuke	Yorba Linda	CA		
Hwang; Yearn-Tzuo	Norwalk	CA		
Sakai; Satoshi	Newport Coast	CA		

US-CL-CURRENT: 700/95; 700/165, 700/182

ABSTRACT:

An apparatus and method is provided for managing and distributing design and manufacturing information throughout a factory in order to facilitate the production of components, such as bent sheet metal components. In accordance with an aspect of the present invention, the management and distribution of critical design and manufacturing information is achieved by storing and distributing the design and manufacturing information associated with each job. By replacing the traditional paper job set-up or work sheet with, for example, an electronically stored job sheet that can be accessed instantaneously from any location in the factory, the present invention improves the overall efficiency of the factory. In addition, through the various aspects and features of the invention, the organization and accessibility of part information and stored expert knowledge is improved.

43 Claims, 96 Drawing figures
Exemplary Claim Number: 1
Number of Drawing Sheets: 68

Full Title Citation Front Review Classification Date Reference Sequences Attachments

KWNC Draw Desc Image

☐ 32. Document ID: US RE36602 E

L5: Entry 32 of 68

File: USPT

Mar 7, 2000

US-PAT-NO: RE36602
DOCUMENT-IDENTIFIER: US RE36602 E

TITLE: Concurrent engineering design tool and method

DATE-ISSUED: March 7, 2000

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Sebastian; Donald H.	Mendham	NJ		
Pratt; Steven	Plantation	FL		
Muthuswamy; Sivakumar	Plantation	FL		
Kniep; David	Metuchen	NJ		
Manoochehri; Souran	Scotch Plains	NJ		
Kolodzieski; Scott	Basking Ridge	NJ		

US-CL-CURRENT: 700/97

ABSTRACT:

A computer-based engineering design system to design a part, a tool to make the part, and the process to make the part. The design system has a processor and a memory. The memory stores feature templates, each feature template being a representation of a primitive object having a form and a function. Each feature template is indexed by the function of the primitive object and includes a representation of a primitive geometric entity having the form of the primitive object. Each feature template can include information relating to a tool to make the primitive object and a process to make the primitive object. The design system also includes an input device for receiving a request to design the part. This request includes one or more predetermined functions that the part performs. A core design module, executable by the processor, designs the part, the tool to make the part and process to make the part by accessing the plurality of feature templates in the memory to locate one or more primitive objects that perform the one or more predetermined functions.

45 Claims, 10 Drawing figures

Exemplary Claim Number: 1

Number of Drawing Sheets: 10

Full Title Citation Front Review Classification Date Reference Sequences Attachments

NAME Draw Desc Image

☐ 33. Document ID: US 6035243 A

L5: Entry 33 of 68

File: USPT

Mar 7, 2000

US-PAT-NO: 6035243

DOCUMENT-IDENTIFIER: US 6035243 A

TITLE: System for handling defects produced during the automated assembly of palletized elements

DATE-ISSUED: March 7, 2000

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Galuga; Marta A.	Rochester	NY		
Glaspy, Jr.; Jay A.	Rochester	NY		

US-CL-CURRENT: 700/110; 700/245, 700/96

ABSTRACT:

The present invention is a method and apparatus for utilizing the characteristics of a pallet, or tray, used to supply workpieces to an automated, flexible assembly station or workcell. Once the characteristics are described and stored in memory, they may be used to uniquely identify workpieces which are determined to be

defective during the automatic assembly operations. The defect information may then be stored in a cell controller which controls one or more workcells for later recall, in order to determine what, if any, further processing should be conducted on the defective workpieces and to prevent further processing thereof.

21 Claims, 13 Drawing figures
Exemplary Claim Number: 1
Number of Drawing Sheets: 11

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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RMC	Draw Desc	Image
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☐ 34. Document ID: US 5995916 A

L5: Entry 34 of 68

File: USPT

Nov 30, 1999

US-PAT-NO: 5995916
DOCUMENT-IDENTIFIER: US 5995916 A

TITLE: Process control system for monitoring and displaying diagnostic information of multiple distributed devices

DATE-ISSUED: November 30, 1999

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Nixon; Mark	Round Rock	TX		
Jundt; Larry O.	Round Rock	TX		
Havekost; Robert B.	Austin	TX		
Ottenbacher; Ron	Austin	TX		

US-CL-CURRENT: 702/182; 700/117, 700/2, 700/83, 714/11

ABSTRACT:

A process control system includes a diagnostic monitoring and display functionality for viewing, in a coherent manner, diagnostic information relating to a process that operates over multiple devices and system components. Although the multiple devices and system components typically encompass widely different device types and operational standards, the process control system incorporates diagnostic information relating to all devices and presents this information to a system user in a uniform manner so that an operating control strategy and the diagnostic information are presented as though all control actions and diagnostic information were performed or generated at a single location. A user-defined diagnostic program is assembled as a set of function blocks and control modules and represented as a set of layers of interconnected control objects identified as modules which include informational structures accessed as attributes. Information is accessed using device hierarchy attribute addressing, supporting direct addressing of I/O signals from modules, bypassing the use of I/O function blocks and avoiding I/O function block behavior.

40 Claims, 27 Drawing figures
Exemplary Claim Number: 1
Number of Drawing Sheets: 31

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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RMC	Draw Desc	Image
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☐ 35. Document ID: US 5984511 A

L5: Entry 35 of 68

File: USPT

Nov 16, 1999

US-PAT-NO: 5984511
DOCUMENT-IDENTIFIER: US 5984511 A

TITLE: Knowledge driven composite design optimization process and system therefor

DATE-ISSUED: November 16, 1999

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Vasey-Glandon; Virginia M.	Florissant	MO		
Hale; Richard D.	St. Louis	MO		
Schmitz; Jeffrey J.	St. Charles	MO		

US-CL-CURRENT: 703/6; 345/420, 700/182, 703/7

ABSTRACT:

A knowledge driven composite design optimization process for designing a laminate part includes steps for generating a globally optimized 3-D ply definition for a laminate part, and modifying the 3-D ply definition to include features of the laminate part, where the generating and modifying steps are parametrically linked to one another and are performed in the recited order. Preferably, the generating step includes substeps for determining connectivity between a plurality of regions defining the laminate part, subsequently generating ramp features detailing interconnection of the regions defining the laminate part, and displaying views and corresponding tabular data describing the laminate part and illustrating both inter-region connectivity and the ramp features as specified by a user. A knowledge driven composite design optimization system and associated computer memory for operating a general purpose computer as a knowledge driven composite design optimization system are also described.

22 Claims, 47 Drawing figures

Exemplary Claim Number: 1

Number of Drawing Sheets: 68

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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KWIC	Draw Desc	Image
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☐ 36. Document ID: US 5984502 A

L5: Entry 36 of 68

File: USPT

Nov 16, 1999

US-PAT-NO: 5984502
DOCUMENT-IDENTIFIER: US 5984502 A

TITLE: Keypad annunciator graphical user interface

DATE-ISSUED: November 16, 1999

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Calder; Dale E.	Mansfield	MA		

US-CL-CURRENT: 700/83; 345/764, 345/866, 345/964

ABSTRACT:

A Keypad Annunciator Graphical User Interface, (KAGUI), for use by an operator of a process control system for presenting and responding to alarm state data generated by the process control system, is disclosed. The KAGUI provides an interactive display of a keypad annunciator on a monitor display screen. A panel manager display and a dynamic icon enhance operator awareness, in a multi-window display

environment, of alarms. The KAGUI synchronizes alarm data presented by the KAGUI with process control system alarm data and informs the operator of the status of interprocess communication.

34 Claims, 13 Drawing figures
Exemplary Claim Number: 1
Number of Drawing Sheets: 10

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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KWIC	Draw Desc	Image
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☐ 37. Document ID: US 5971589 A

L5: Entry 37 of 68

File: USPT

Oct 26, 1999

US-PAT-NO: 5971589
DOCUMENT-IDENTIFIER: US 5971589 A

TITLE: Apparatus and method for managing and distributing design and manufacturing information throughout a sheet metal production facility

DATE-ISSUED: October 26, 1999

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Hazama; Kensuke	Yorba Linda	CA		
Kask; Kalev	Irvine	CA		
Sakai; Satoshi	Newport Coast	CA		
Schwalb; Moshe	Irvine	CA		

US-CL-CURRENT: 700/145; 700/165, 700/182

ABSTRACT:

A system and method are provided for developing a bend model of a part to be produced at an intelligent production facility. In accordance with an aspect of the disclosed system and method, faces of the part are detected based on initial part information, and bendlines of the part are identified based on the detected faces of the part. Further, additional part information is generated by performing a predetermined operation (e.g., a folding operation or an unfolding operation) on the detected faces of the part. The disclosed system and method also include other capabilities, such as the capability to perform clean-up operations on initial, 2-D part information and to selectively eliminate part thickness representations in order to facilitate the preparation of a 3-D representation of the part from the modified 2-D part information.

152 Claims, 95 Drawing figures
Exemplary Claim Number: 1
Number of Drawing Sheets: 68

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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KWIC	Draw Desc	Image
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☐ 38. Document ID: US 5910895 A

L5: Entry 38 of 68

File: USPT

Jun 8, 1999

US-PAT-NO: 5910895
DOCUMENT-IDENTIFIER: US 5910895 A

TITLE: Low cost, easy to use automatic test system software

DATE-ISSUED: June 8, 1999

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Proskauer; Daniel C.	Newtown	MA		
Deshpande; Pradeep B.	Burlington	MA		

US-CL-CURRENT: 700/121; 716/4

ABSTRACT:

Automatic test equipment for semiconductor devices with low cost, easy to use software for developing and executing test programs. The tester is controlled with a computer work station running a commercially available spread sheet program. The commercially available spread sheet program is set as an application to provide a program development environment. In addition, programs made with the commercially available spread sheet program control the execution of tests on semiconductor devices. The tester is easy to program because use of the commercially available spread sheet program generates well known programming interfaces. In this way, the commercially available spread sheet program implements the software controlling the tester rather than merely providing spread sheet functions used by the application. The software controlling the automatic test equipment is therefore very easy to program or modify. It is also very easy to program.

14 Claims, 23 Drawing figures
Exemplary Claim Number: 7
Number of Drawing Sheets: 23

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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RWMC	Draw Desc	Image
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☐ 39. Document ID: US 5909368 A

L5: Entry 39 of 68

File: USPT

Jun 1, 1999

US-PAT-NO: 5909368

DOCUMENT-IDENTIFIER: US 5909368 A

TITLE: Process control system using a process control strategy distributed among multiple control elements

DATE-ISSUED: June 1, 1999

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Nixon; Mark	Round Rock	TX		
Havekost; Robert B.	Austin	TX		
Jundt; Larry O.	Round Rock	TX		
Stevenson; Dennis	Round Rock	TX		
Ott; Michael G.	Austin	TX		
Webb; Arthur	Leicestershire			GB
Lucas; Mike	Leicestershire			GB

US-CL-CURRENT: 700/2; 700/131, 700/83, 700/86, 700/9

ABSTRACT:

A process controller implements an overall, user-developed control strategy in a process control network that includes distributed controller and field devices, such as Fieldbus and non-Fieldbus devices. A user defines the control strategy by building a plurality of function blocks and control modules and downloading or

installing user-specified portions of the control strategy into the Fieldbus devices and the non-Fieldbus devices. Thereafter, the Fieldbus devices automatically perform the downloaded portions of the overall strategy independently of other portions of the control strategy. For example in a process control system that includes distributed field devices, controllers and workstations, portions of the control strategy downloaded or installed into the field devices operate independently of and in parallel with the control operations of the controllers and the workstations, while other control operations manage the Fieldbus devices and implement other portions of the control strategy.

36 Claims, 23 Drawing figures
Exemplary Claim Number: 1
Number of Drawing Sheets: 21

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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KWC	Draw Desc	Image
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☐ 40. Document ID: US 5903455 A

L5: Entry 40 of 68

File: USPT

May 11, 1999

US-PAT-NO: 5903455
DOCUMENT-IDENTIFIER: US 5903455 A

TITLE: Interface controls for use in a field device management system

DATE-ISSUED: May 11, 1999

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Sharpe, Jr.; Richard R.	Lakeville	MN		
Bruck; Robert	Apple Valley	MN		
Wagenknecht; Richard	Cottage Grove	MN		
Westbrock; Jon D.	Richfield	MN		
Tielens; Craig R.	Minneapolis	MN		
Kieley; James W.	Plymouth	MN		

US-CL-CURRENT: 700/83; 700/17

ABSTRACT:

An interface control for use in a field device management system coupled to a set of smart field devices automatically performs functions related to communication between a device, a database and a user of the management system and functions related to interfacing with a user in a manner which is transparent to the software application running on the management system. The control monitors a device, or a block or a parameter of a device, displays information pertaining to the device, block or parameter to a user, receives information pertaining to such device, block, or parameter from a user and the device, automatically updates the displayed information, and implements changes to the device block or parameter specified by the user. A timeline control specifies a time at which past, present or future configurations of devices, blocks, parameters, or other data associated with one or more devices is to be displayed.

46 Claims, 20 Drawing figures
Exemplary Claim Number: 1
Number of Drawing Sheets: 18

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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KWC	Draw Desc	Image
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☐ 41. Document ID: US 5886897 A

L5: Entry 41 of 68

File: USPT

Mar 23, 1999

US-PAT-NO: 5886897

DOCUMENT-IDENTIFIER: US 5886897 A

TITLE: Apparatus and method for managing and distributing design and manufacturing information throughout a sheet metal production facility

DATE-ISSUED: March 23, 1999

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Hazama; Kensuke	Yorba Linda	CA		
Kask; Kalev	Irvine	CA		
Sakai; Satoshi	Newport Coast	CA		
Subbaraman; Anand	Santa Ana	CA		

US-CL-CURRENT: 700/182

ABSTRACT:

An apparatus and method is provided for managing and distributing design and manufacturing information throughout a factory in order to facilitate the production of components, such as bent sheet metal components. In accordance with an aspect of the present invention, the management and distribution of critical design and manufacturing information is achieved by storing and distributing the design and manufacturing information associated with each job. By replacing the traditional paper job set-up or work sheet with, for example, an electronically stored job sheet that can be accessed instantaneously from any location in the factory, the present invention improves the overall efficiency of the factory. In addition, through the various aspects and features of the invention, the organization and accessibility of part information and stored expert knowledge is improved.

69 Claims, 96 Drawing figures

Exemplary Claim Number: 18

Number of Drawing Sheets: 68

Full Title Citation Front Review Classification Date Reference Sequences Attachments

NAME Draw Desc Image

☐ 42. Document ID: US 5884072 A

L5: Entry 42 of 68

File: USPT

Mar 16, 1999

US-PAT-NO: 5884072

DOCUMENT-IDENTIFIER: US 5884072 A

TITLE: Networked facilities management system with updated data based on aging time

DATE-ISSUED: March 16, 1999

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Rasmussen; David E.	Wales	WI		

US-CL-CURRENT: 709/223; 700/2, 700/3, 709/224

ABSTRACT:

A networked system having a wide variety of applications and particularly applicable

to facilities management systems has multiple levels of software in processing nodes. The levels include a "features" processing level which communicates requests for data to a software object level containing databases of processes and attributes and database managers. The database managers in the software object level operate to provide data to the high level features in the same format. The software object level communicates with a hardware object level which also contains databases and database managers to mask differences between operational hardware units. By categorizing operational units by type, additional units of a known type can be added with only low level hardware object database changes. Adding units of a new type is facilitated by software changes confined to the lower level hardware and software objects, avoiding software changes at high level features. Individual software objects are tailored for typical types of inputs and output devices encountered by facilities management systems. Universal drive circuitry also provides applicability to a broad range of devices. Data is stored with an aging time such that during a time period when a data item is valid, requests for that particular data item are serviced with the stored data. A request for the particular data item which occurs after the data item aging time is serviced with a new value of the data which is again valid for the aging time.

13 Claims, 86 Drawing figures
Exemplary Claim Number: 1
Number of Drawing Sheets: 83

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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NAAC	Draw Desc	Image
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☐ 43. Document ID: US 5864482 A

L5: Entry 43 of 68

File: USPT

Jan 26, 1999

US-PAT-NO: 5864482
DOCUMENT-IDENTIFIER: US 5864482 A

TITLE: Apparatus and method for managing distributing design and manufacturing information throughout a sheet metal production facility

DATE-ISSUED: January 26, 1999

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Hazama; Kensuke	Yorba Linda	CA		
Hwang; Yearn-Tzuo	Norwalk	CA		
Sakai; Satoshi	Newport Coast	CA		

US-CL-CURRENT: 700/95; 700/182, 715/502

ABSTRACT:

An apparatus and method is provided for managing and distributing design and manufacturing information throughout a factory in order to facilitate the production of components, such as bent sheet metal components. In accordance with an aspect of the present invention, the management and distribution of critical design and manufacturing information is achieved by storing and distributing the design and manufacturing information associated with each job. By replacing the traditional paper job set-up or work sheet with, for example, an electronically stored job sheet that can be accessed instantaneously from any location in the factory, the present invention improves the overall efficiency of the factory. In addition, through the various aspects and features of the invention, the organization and accessibility of part information and stored expert knowledge is improved.

90 Claims, 96 Drawing figures
Exemplary Claim Number: 1
Number of Drawing Sheets: 68

☐ 44. Document ID: US 5862401 A

L5: Entry 44 of 68

File: USPT

Jan 19, 1999

US-PAT-NO: 5862401

DOCUMENT-IDENTIFIER: US 5862401 A

TITLE: Programmable central intelligence controller and distributed intelligence network for analog/digital control systems

DATE-ISSUED: January 19, 1999

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Barclay, Jr.; Clayton C.	Elkhart	IN		

US-CL-CURRENT: 710/1; 700/4, 700/5

ABSTRACT:

The present invention involves a programmable microprocessor based controller having the capacity to store multiple operational instruction sets for independently controlling system components. The invention further involves a distributed intelligence network of such programmable controllers having the capability to interface with one another, Host computers, and system control components to provide system-wide automation for simultaneously monitoring and controlling video, audio, and electro-mechanically operated equipment. The programmable controller accepts analog and digital inputs and provides a wide range of user defined control functionality through its analog and digital outputs and its many external connections. The controller can support one and possibly two communication buses, depending upon the application, upon which a plurality of system components may be connected to each. Automatic control system applications include, but are not limited to: concert sound systems, stadium sound systems, theme park automation, video-conferencing, etc. The invention further involves firmware for implementing smooth output limiting, automatic standby, short detection, enhanced ODEP conservation, and interrupt driven reporting.

21 Claims, 14 Drawing figures

Exemplary Claim Number: 1

Number of Drawing Sheets: 13

☐ 45. Document ID: US 5828575 A

L5: Entry 45 of 68

File: USPT

Oct 27, 1998

US-PAT-NO: 5828575

DOCUMENT-IDENTIFIER: US 5828575 A

TITLE: Apparatus and method for managing and distributing design and manufacturing information throughout a sheet metal production facility

DATE-ISSUED: October 27, 1998

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Sakai; Satoshi	Newport Coast	CA		

US-CL-CURRENT: 700/182

ABSTRACT:

An apparatus and method is provided for managing and distributing design and manufacturing information throughout a factory in order to facilitate the production of components, such as bent sheet metal components. In accordance with an aspect of the present invention, the management and distribution of critical design and manufacturing information is achieved by storing and distributing the design and manufacturing information associated with each job. By replacing the traditional paper job set-up or work sheet with, for example, an electronically stored job sheet that can be accessed instantaneously from any location in the factory, the present invention improves the overall efficiency of the factory. In addition, through the various aspects and features of the invention, the organization and accessibility of part information and stored expert knowledge is improved.

107 Claims, 96 Drawing figures
Exemplary Claim Number: 1
Number of Drawing Sheets: 68

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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FIG	Draw Desc	Image
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☐ 46. Document ID: US 5822206 A

L5: Entry 46 of 68

File: USPT

Oct 13, 1998

US-PAT-NO: 5822206

DOCUMENT-IDENTIFIER: US 5822206 A

TITLE: Concurrent engineering design tool and method

DATE-ISSUED: October 13, 1998

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Sebastian; Donald	Parlin	NJ		
Pratt; Steven	Plantation	FL		
Muthuswamy; Sivakumar	Plantation	FL		
Knip; David Johann	Metuchen	NJ		
Manoochchri; Souran	Scotch Plains	NJ		
Kolodzieski; Scott	Basking Ridge	NJ		

US-CL-CURRENT: 700/97; 700/182

ABSTRACT:

A computer-based engineering design system to design a part, a tool to make the part, and the process to make the part. The design system has a processor and a memory. The memory stores feature templates, each feature template being a representation of a primitive object having a form and a function. Each feature template is indexed by the function of the primitive object and includes a representation of a primitive geometric entity having the form of the primitive object. Each feature template can include information relating to a tool to make the primitive object and a process to make the primitive object. The design system also includes an input device for receiving a request to design the part. This request includes one or more predetermined functions that the part performs. A core design module, executable by the processor, designs the part, the tool to make the part and process to make the part by accessing the plurality of feature templates in the memory to locate one or more primitive objects that perform the one or more

predetermined functions.

26 Claims, 10 Drawing figures
Exemplary Claim Number: 1
Number of Drawing Sheets: 10

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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KWIC	Draw Desc	Image
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☐ 47. Document ID: US 5801942 A

L5: Entry 47 of 68

File: USPT

Sep 1, 1998

US-PAT-NO: 5801942
DOCUMENT-IDENTIFIER: US 5801942 A

TITLE: Process control system user interface including selection of multiple control languages

DATE-ISSUED: September 1, 1998

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Nixon; Mark	Round Rock	TX		
Havekost; Robert B.	Austin	TX		
Jundt; Larry O.	Round Rock	TX		
Stevenson; Dennis	Round Rock	TX		
Ott; Michael G.	Austin	TX		
Webb; Arthur	Leicestershire			GB2
Lucas; Mike	Leicestershire			GB2

US-CL-CURRENT: 700/83; 700/17, 700/7, 700/87

ABSTRACT:

A process control system includes a user interface which supports multiple IEC-1131 standard control languages and user-selection from among the control languages. From a single application routine, a user selects a control language from among a plurality of control languages including, for example, Function Blocks, Sequential Function Charts, Ladder Logic and Structured Text, to implement a control strategy.

21 Claims, 31 Drawing figures
Exemplary Claim Number: 1
Number of Drawing Sheets: 30

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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KWIC	Draw Desc	Image
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☐ 48. Document ID: US 5774689 A

L5: Entry 48 of 68

File: USPT

Jun 30, 1998

US-PAT-NO: 5774689
DOCUMENT-IDENTIFIER: US 5774689 A

TITLE: Network configuration management system for digital communication networks

DATE-ISSUED: June 30, 1998

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Curtis; David C.	Chester Springs	PA		
Curtis; Kathleen P.	Chester Springs	PA		
Denunzio; David D.	Glenside	PA		
Reed; William P.	Haddonfield	NJ		
Wolak; Robert A.	Audubon	PA		

US-CL-CURRENT: 703/21; 345/803, 370/351, 379/201.12, 379/219, 700/99, 703/27, 709/205, 709/315, 714/4

ABSTRACT:

An arrangement (apparatus and method) for dynamically provisioning infrastructure components in a digital communication network using an object-oriented relational paradigm. A network configuration system, also referred to as a video support system, stores all related information on each of the infrastructure components (IFCs) as objects in an object-oriented relational database, including the functions, capabilities, locations, when and how the IFCs are assigned, and the capacities, working and spare, existing in and between various locations. The objects are arranged into clusters based on common characteristics, and the object clusters (modules), selectively access other modules to provide functional and logical connections independent from nonrelevant objects, such as physical location. Entity relationships establish the relevancy of different objects and object clusters. The object-oriented relational paradigm allows new technology devices to be added to the infrastructure, and enables intelligent infrastructure components to perform dynamic and adaptive configurations with minimal modification in the provisioning system.

22 Claims, 12 Drawing figures
Exemplary Claim Number: 1
Number of Drawing Sheets: 12

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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MMIC	Draw Desc	Image
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☐ 49. Document ID: US 5768148 A

L5: Entry 49 of 68

File: USPT

Jun 16, 1998

US-PAT-NO: 5768148

DOCUMENT-IDENTIFIER: US 5768148 A

TITLE: Man machine interface for power management control systems

DATE-ISSUED: June 16, 1998

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Murphy; Thomas A.	Southington	CT		
Gourley; Kelley E.	Minneapolis	MN		
Winkel; Cliff John	Eagan	MN		
Bolte; Bret William	Ramsey	MN		

US-CL-CURRENT: 700/286; 345/759, 702/67

ABSTRACT:

A utility for rapid development of three dimensional representations of electrical distribution switchgear is provided. These switchgear elevations have logical connections to the switchgear devices. An elevation can be modified to any dimensions with an infinite number of combinations and arrangements of meters and protection devices to quickly and accurately represent a customer's switchgear.

Also, an event logger utility is provided for viewing, organizing and analyzing unusual behavior in a power system. The event logger utility passes a received message as an un-acknowledgeable or acknowledgeable alarm or as an event based upon the contents of a initialization file. A utility for the waveform capture is provided for viewing and analysis of waveforms (e.g., Fourier, frequency and/or harmonic analysis) captured by sophisticated metering devices. Waveforms from a device may be super-imposed for analysis. Processing of the collected waveform data to display any one of the eight waveform parameters (i.e., I.sub.a, I.sub.b, I.sub.c, I.sub.n, V.sub.a, V.sub.b, V.sub.c, V.sub.x) or a combination thereof including an "all" selection in a window tiling format is provided.

14 Claims, 112 Drawing figures
Exemplary Claim Number: 1
Number of Drawing Sheets: 94

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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KWIC	Draw Desc	Image
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☐ 50. Document ID: US 5768119 A

L5: Entry 50 of 68

File: USPT

Jun 16, 1998

US-PAT-NO: 5768119
DOCUMENT-IDENTIFIER: US 5768119 A

TITLE: Process control system including alarm priority adjustment

DATE-ISSUED: June 16, 1998

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Havekost; Robert B.	Austin	TX		
Beoughter; Ken J.	Round Rock	TX		
Faltesek; Roy	Round Rock	TX		

US-CL-CURRENT: 700/4; 700/83, 709/201, 709/224

ABSTRACT:

A process control system includes an alarm and event monitoring and display system for which various users of the system can easily prioritize the alarm and event information that is displayed. The alarm and event configuration is highly flexible and is configured by a user to display particular events in a hierarchical manner, as directed by the user. The user sets a desired alarm priority, selecting high importance alarms for more urgent display and annunciation and rendering a lower display status to less urgent events. At log-on, a particular system user is associated with a display configuration for displaying alarm and event information that is pertinent to that user and the process control system is automatically "primed" with current alarms and initiate process information about new alarm and event occurrences.

30 Claims, 32 Drawing figures
Exemplary Claim Number: 1
Number of Drawing Sheets: 31

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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KWIC	Draw Desc	Image
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